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GROWING GAUTENG TOGETHER

Setswana/English

Lenaneotokafatso la Dipalo tša Mophato R Grade R Mathematics Improvement Programme



**Thutano 10 • Workshop 10
Kaedi ya Mofathosi • Facilitator's Guide**

The Grade R Mathematics and Language Improvement Project is an initiative of the **Gauteng Department of Education** and its key partner, the **Gauteng Education Development Trust**.

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The Grade R Mathematics and Language Improvement Project is managed by **JET Education Services** with **UCT's Schools Development Unit** and **Wordworks** as technical partners.

The **Schools Development Unit (SDU)** at the **University of Cape Town (UCT)** is the mathematics technical partner to the Grade R Mathematics and Language Improvement Project. The SDU is a unit within UCT's School of Education that focuses on teachers' professional development in Mathematics, Science, Literacy/Language and Life Skills from Grade R to Grade 12. The SDU offers teacher qualifications and approved UCT short courses, school-based work, materials development and research to support teaching and learning in all South African contexts.

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Programme conceptualisation and management: Cally Kuhne and Tholisa Matheza

Translation and publishing project management: Arabella Koopman

Translation co-ordination (Sotho languages): Lorato Trok

Translation: Gaoretelelwe Benjamin Phuti

Editing (Setswana): Lorato Trok

Illustrations: Jiggs Snaddon-Wood

Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R ke itshimololelo ya **Lefapha la Thuto la Gauteng (Gauteng Department of Education)** mmogo le badirisani ba bona ba botlhokwa, **Gauteng Education Development Trust**.

Tlhabolole le tthagiso ya didiriswa tsa katiso le phaposiborutelo ya Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R e kgotshitswe ke tshegetso ya **United States Agency for International Development** le **Zenex Foundation** ka matlole.

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Schools Development Unit (SDU) kwa **University of Cape Town (UCT)** ke badirisani ba setegeniki ba dipalo go Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R. SDU ke yuniti e e ka tlase ga School of Education sa UCT e e totileng tokafatso ya boporofesenele jwa barutabana mo Dipalong, Bonetetshing, Kitsokwalo/Puo le Dikgonotshelo go simolola ka Mophato R go fitlha ka Mophato 12. SDU e neelana ka thuto ka boithutedi jwa borutabana le dithutokhutshwe tse di dumeletsweng tsa UCT, tiro ya kwa sekolong, tthagiso ya dibukana le dipatlisiso go tshegetsa go ruta le go ithuta mo makaelong otlhe a Aforikaborwa.

DITEBOGO

Ditebogo di lebiswa segolobogolo go:

- Batlhankedi ba Lefapha la Thuto la Gauteng mo Lephatheng la Kharikhulamo, Bokaedi jwa Thuto ya Barutabana le Thuto e e Kgethegileng ka ntlha ya seabe sa bona go dirisa dibukana tseno tsa rona.
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- Setlhophla se se kwalang *R-Maths*: Badiri ba SDU le bagakolodi.



Porojeke ya Lenaneotokafatso la Dipalo tsa Mophato R le tserwe go tswa mo *R-Maths*, e phasaladitswe lwantlha ka 2017 ke Schools Development Unit, ya University of Cape Town. Tetlokhopi ya *R-Maths* e tshwerwe ke University of Cape Town.

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Motlhami le molaodi wa lenaneo: Cally Kuhne le Tholisa Matheza
Phetolelo le phasalatso ya bolaodi jwa lenaneo: Arabella Koopman
Morulaganyi wa phetolelo (dipuo tsa Sesotho): Lorato Trok
Phetolelo: Gaoretelelwe Benjamin Phuti
Tseleganyo (Setswana): Lorato Trok
Ditshwantsho: Jiggs Snaddon-Wood

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Overview

Purpose

This is the tenth of twelve Grade R Mathematics Improvement Programme (Maths Programme) workshops, which form part of the Gauteng Department of Education (GDE) Grade R Mathematics and Language Improvement Project.

The purpose of this workshop is to continue assisting teachers to implement the Maths Programme in their classrooms. Participants will have the opportunity to reflect on their implementation of the Maths Programme and discuss their planning, teaching and assessment. They will also consider learner progress, and individual developmental and learning needs. Participants will reflect on appropriate assessment strategies for capturing learner progress. The workshop explores the content for Term 4 Weeks 1–3 and its classroom implementation.

References to the Grade R Mathematics Content Areas are taken from the *Curriculum and Assessment Policy Statement (CAPS): Grade R Mathematics (Final Draft)*, 2011, Department of Basic Education, South Africa.

Learning outcomes

- ◆ To reflect on the implementation of Term 3 Weeks 7–10
- ◆ To reflect on the use of the guiding principles of teaching maths in Grade R
- ◆ To deepen understanding of continuous learner observation in Grade R
- ◆ To reflect on informal forms of assessment in Grade R
- ◆ To reflect on challenges and find solutions to implementing the Maths Programme
- ◆ To map out the Maths Programme content to be taught in Term 4 Weeks 1–3

Workshop content

- ◆ Opening and reflection (1 hour)
 - ◆ Session 1: Observation and assessment (1 hour)
- TEA
- ◆ Session 2: The guiding principles of teaching maths in Grade R (1 hour)
 - ◆ Session 3: Introducing numbers 10 and 0 (1 hour)
- LUNCH
- ◆ Session 4: Planning for teaching (1½ hours)
 - ◆ Closing activities (30 minutes)

Thadiso

Maitlhommo

Eno ke thutano ya bolesome ya dithutano di le lesomepedi tsa Lenaneotokafatso la Dipalo tsa Mophato R (Lenaneo la Dipalo), le e leng karolo ya Porojeke ya Lenaneotokafatso la Dipalo le Puo tsa Mophato wa R la Lefapha la Thuto la Gauteng (GDE).

Maitlhommo a thutano eno ke go thusa barutabana go diragatsa Lenaneo la Dipalo mo diphaposiborutelong tsa bona. Batsayakarolo ba tlaa nna le tšhono ya go sedisisa dikelotlhoko tsa bona. Ba tlaa tlhotlhomisa ka moo melawana ya kaelo ya go ruta dipalo tsa Mophato R e tlaa tshwaelang mo thulaganyetsong, go ruteng le mo tlhatlhobong. Gape e tlaa ela tlhoko tswelolepele ya morutwana, mmogo le ditlhokego tsa kgolo le go ithuta tsa morutwana ka nosi. Thutano e lekeletsa diteng tsa Kgweditharo 4 Dibeke 1–3 le tiragatso ya tsona mo phaposiborutelong.

Metswedi ya Dikaroloteng tsa Dipalo tsa Mophato wa R di tserwe go tswa mo *Polelong ya Pholisi ya Kharikhulamo le Tlhatlhobo (PPKT): Dipalo tsa Mophato wa R (Lokwalo lwa Bofelo)*, 2011, Lefapha la Thutotheo, Aforika Borwa.

Dipoelothuto

- ◆ Go sedisisa mo tiragatsong ya Kgweditharo 3 Dibeke 7–10
- ◆ Go sedisisa tiriso ya melawana e e kaelang ya go ruta dipalo mo Mophatong wa R
- ◆ Go tiisa go tshaloganya kelotlhoko e e tswelletseng pele ya morutwana mo Mophatong wa R
- ◆ Go sedisisa mefuta ya tlhatlhobo e e sa tlhomamang mo Mophatong wa R
- ◆ Go sedisisa dikgwetlho le go batla ditharabololo tsa go diragatsa Lenaneo la Dipalo
- ◆ Go rulaganya diteng tsa Lenaneo la Dipalo tse di tshwanetseng go rutiwa mo Kgweditharong 4 Dibeke 1–3

Diteng tsa thutano

- ◆ Pulo le tshedisiso (Ura e le 1)
- ◆ Karolo 1: Kelotlhoko le tlhatlhobo (Ura e le 1)

TEE

- ◆ Karolo 2: Melawana e e kaelang ya go ruta dipalo mo Mophato R (Ura e le 1)
- ◆ Karolo 3: Go tlhagisa dinomere 10 le 0 (Ura e le 1)

DIJOTSHEGARE

- ◆ Karolo 4: Go ithulaganyetsa go ruta (Diura di le 1½)
- ◆ Ditirwana tsa tswalelo (Metsotso e le 30)

Preparation

- ◆ PPT welcome and outcomes
- ◆ Familiarise yourself with all the PowerPoints and videos
- ◆ Read:
 - Concept Guide*, pages 14–73
 - Activity Guide: Term 4*, pages 22–69
- ◆ Bring the post box
- ◆ Remind participants to bring their:
 - Concept Guide*
 - Activity Guide: Term 3*
 - Activity Guide: Term 4*
 - Poster Book*
- ◆ Cut out the eight pictures of the guiding principles (Appendix B)
- ◆ Prepare one set of the number cards in Appendix C for each group

Materials

- ◆ Flipchart paper, kokis
- ◆ Prestik
- ◆ *A Resource Kit* for each group

Ipaakanyo

- ◆ PPT kamogelo le dipoelo
- ◆ Itlwaetse ditlhagiso tsa Powerpoint le divideo
- ◆ Buisa:
 - Kaedi ya Mogopolo, ditsebe 14–73*
 - Kaedi ya Ditirwana: Kgweditharo 4, ditsebe 22–69*
- ◆ Tlaya ka lebokosoposo
- ◆ Gopotsa batsayakarolo go tla ka ditlabakelo tse di latelang tsa bona:
 - Kaedi ya Mogopolo*
 - Kaedi ya Ditirwana: Kgweditharo 3*
 - Kaedi ya Ditirwana: Kgweditharo 4*
 - Buka ya Diphousetara*
- ◆ Segolola ditshwantsho tse robedi tsa melawana e e kaelang (Mametlelelo B)
- ◆ Rulaganya sete e le nngwe ya dikaratapalo mo Mametlelelong ya C ya sethlopha se sengwe le se sengwe

Didiriswa

- ◆ Pampiri ya tšhatephetogi, dikhokhi
- ◆ Sekgomaretsi
- ◆ *Kgetsana ya Didiriswa* ya sethlopha se sengwe le se sengwe

Opening and reflection

1 hour

Reflection involves thinking and talking about your experiences and what you have learnt.

Reflection on implementation

Facilitator's notes

- ◆ PPT: Learning outcomes of the workshop.
- ◆ Discuss the post box comments and feedback from the previous workshop. Remind participants to 'post' any new comments and feedback during the workshop.
- ◆ Remind participants of the *Take back to school task* from the end of Workshop 9.
- ◆ Refer participants to **Activity 1** and read through the instructions aloud.
- ◆ Give each group a sheet of flipchart paper. Participants complete the activity in their groups. Groups then present their newspaper article.
- ◆ After the presentations, summarise the successes and challenges and discuss the implications for classroom implementation.

Here is the *Take back to school task* from Workshop 9.



Take back to school task (Workshop 9)

1. Use *Activity Guide: Term 3* to plan and implement Term 3 Weeks 7–10 of the Maths Programme.
2. Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 3 Weeks 7–10.
3. Write comments in the book that you use to keep track of each learner's progress (learner observation book). Use the '**Check that learners are able to**' observation list (eye box) during each of the teacher-guided activities to guide your observations and comments.
4. Bring your learner observation book and the notes you made when reflecting on each day's teaching to the next workshop.
5. Bring a copy of the Term 3: Exemplar Record of Continuous Assessments (from *Activity Guide: Term 3*) to the next workshop.



Activity 1

1. In your group, prepare a newspaper article on teaching and learning maths in Grade R. Use the Maths Programme and your classroom implementation of it as the basis for your article. Include the following:

Tshedisiso e akaretsa go akanya le go bua ka ga maitemogelo a gago le se o se ithutileng.

Tshedisiso mo tiragatsong

Dintlha tsa mofatlhosi

- ◆ PPT: Dipuelothuto tsa thutano.
- ◆ Buisanang ka ga ditshwaelo tsa lebokosoposo le ditlamorago tse di tswang mo thutanong e e fetileng. Gopotsa batsayakarolo go 'posa' ditshwaelo dingwe le dingwe tse dišwa le ditlamorago ka nako ya thutano.
- ◆ Gopotsa batsayakarolo ka ga *Tirwana e o e busetsang kwa sekolong* go tswa kwa bokhutlong jwa Thutano 9.
- ◆ Kopa batsayakarolo go lebelela **Tirwana 1** le go buisetsa ditaelo kwa godimo.
- ◆ Neela setlhophha se sengwe le se sengwe lelhare la pampiri ya tšhatphetogi. A batsayakarolo ba dire tirwana mo ditlhopheng tsa bona. A jaanong ditlhophha di tlagise diathikele tsa tsona tsa makwalodikgang.
- ◆ Morago ga ditlhagiso, sobokanya katlego le dikgwetlho mme lo buisane ka ga bokao jwa tseno mo tiragatsong ya phaposiborutelo.

Tirwana e o e busetsang kwa sekolong ke eno go tswa mo Thutanong ya 9.



Tirwana e o e busetsang kwa sekolong (Thutano 9)

1. Dirisa *Kaedi ya Ditirwana: Kgweditharo 3* go rulaganya le go diragatsa Kgweditharo 3 Dibeke 7–10 tsa Lenaneo la Dipalo.
2. Kwala dintlha tsa se se dirileng sentle thata, se se sa dirang sentle le gore ba rarabolotse jang dikgwetlho dingwe ka nako ya tiragatso ya Kgweditharo 3 Dibeke 7–10.
3. Kwala ditshwaelo mo bukeng tse o di dirisang go ela tlhoko tswelelopele ya morutwana (buka ya ngwana ya kelotlhoko). Dirisa lenanekelotlhoko (lebokoso la leitlho) la '**Ela tlhoko gore barutwana ba kgona go**'. Ka nako ya ditirwana tse dingwe le tse dingwe tse di kaelwang ke morutabana go kaela dikelotlhoko le ditshwaelo tsa gago.
4. Tlaya ka buka ya morutwana ya kelotlhoko le dintlha tse o di kwadileng fa o sedisisa thuto ya letsatsi le lengwe le le lengwe mo thutanong e e latelang.
5. Tlaya ka khophi ya Kgweditharo 3: Rekoto ya Sekai sa Ditlhatlhobotsweledi (go tswa mo *Kaeding ya Ditirwana: Kgweditharo 3*) kwa thutanong e e latelang.



Tirwana 1

1. Mo setlhopheng sa gago, baakanya athikele ya lekwadodikgang mo go ruteng le go ithuteng dipalo mo Mophatong wa R. Dirisa Lenaneo la Dipalo le tiragatso ya yona mo phaposiborutelo ya gago jaaka motsho wa athikele ya gago. Akaretsa tse di latelang:

- ◆ why maths in Grade R is important
- ◆ your successes and challenges with implementing the Maths Programme in Terms 1, 2 and 3
- ◆ strategies you used to resolve challenges.

2. Write the newspaper article on flipchart paper.
3. You will present your article to the other groups and answer any of their questions.

- ◆ goreng dipalo di le bothokwa mo Mophatong wa R
- ◆ katlego le dikgwetlho tsa gago mo tiragatsong ya Lenaneo la Dipalo mo Dikgweditharong 1, 2 le 3
- ◆ malepa a o a dirisitseng go rarabolola dikgwetlho.

2. Kwala athikele ya lekwalodikgang mo pampiring ya tšhatephetogi.
3. O tlaa tthagisa athikele ya gago go ditlhopha tse dingwe le go araba dipotso tsa bona.

Session 1: Observation and assessment

1 hour

Observation in Grade R

Observation is an important part of the process of teaching, learning and assessment. In Grade R, the main assessment method is observation. Teachers gather information about learners during whole class activities, small group activities and free play (inside and outside the classroom). During the teacher-guided activities, your interaction with individual learners provides valuable information about their progress. By recording the learners' progress in understanding specific maths concepts in your notebook on an ongoing basis, you build up a complete picture of each learner.

Objective observation

For observation to be effective, teachers need to understand and know what to focus on.

In the next activity, you will practise your observation skills. *This is an individual activity. It is very important that you do not talk to anyone about your observations.*

Facilitator's notes

- ◆ PPT: Photo from **Activity 2**.
- ◆ Explain that in **Activity 2** participants will practise their observation skills.
- ◆ Read through **Activity 2** together and make sure everyone understands that it is an individual activity and not to be discussed with anyone.
- ◆ When everyone has finished the activity, give participants a turn to call out what they have written. Write down each observation (exactly as it is called out) and tick the observations that are repeated.
- ◆ Discuss the importance of being objective when observing. Make the point that teachers need to record facts (what is seen and heard) and not assumptions or opinions (what they think may be happening and why).
- ◆ Read through the list of observations that participants called out and discuss whether each statement is a **FACT** or an **ASSUMPTION**. Write 'F' or 'A' next to each statement. For example:
 - The learner has built a construction using rectangle-shaped and triangle-shaped blocks. **F**
 - The learner is not managing to balance the triangle-shaped blocks. **A**
 - The learner is focused on the block-building task. **F**
 - The learner in the background is very happy. **A**
- ◆ Participants go through their own lists, marking each statement with an 'F' or an 'A'.
- ◆ Wrap up the activity with a discussion about the importance of objective observation.

Karolo 1: Kelotlhoko le tthatlhobo

Ura e le 1

Kelotlhoko mo Mophatong wa R

Kelotlhoko ke karolwana ya botlhokwa mo tsamaong ya go ruta, go ithuta le go tthatlhoba. Mo Mophatong wa R, tsela e kgolo ya go tthatlhoba ke ya go ela tlhoko. Barutabana ba kokoanya tshedimosetso ka ga barutwana ka nako ya ditirwana tsa phaposiborutelo yotlhe, tsa ditlhopha tse dinnye le tsa tshameko e e lokologileng (mo teng le kwa ntle ga phaposiborutelo). Ka nako ya ditirwana tse di kaelwang ke morutabana, tlhaeletsano ya gago le barutwana ka bosu e tlamela ka tshedimosetso ya botlhokwa tebang le tswelolepele ya bona. O aga setshwantsho se se feletseng sa morutwana yo mongwe le yo mongwe ka go rekota tswelolepele ya barutwana mo go tthaloganyeng megopolo e e riling ya dipalo mo bukeng ya gago ya go kwala dintlha ka gale.

Kelotlhoko e e sa gobeleteng

Barutabana ba tlhoka go tthaloganya le go itse gore ba tobe eng gore kelotlhoko e nne e e nang le mosola.

Mo tirwaneng e e latelang, o tlaa ikatisa dikgono tsa kelotlhoko. *Eno ke tirwana ya motho ka nosi. Go botlhokwa gore o seke wa bua le ope ka ga dikelotlhoko tsa gago.*

Dintlha tsa mofatlhosi

- ◆ PPT: Setshwantsho go tswa mo **Tirwaneng ya 2**.
- ◆ Tlhalosa gore mo **Tirwaneng ya 2** batsayakarolo ba tlaa ikatisetsa dikgono tsa bona tsa go ela tlhoko.
- ◆ Buisang **Tirwana 2** mmogo mme lo netefatse gore mongwe le mongwe o tthaloganya gore ke tirwana ya motho ka nosi le gore ga e tlhoke go buisanelwa le ope.
- ◆ Fa mongwe le mongwe a feditse tirwana, neela batsayakarolo sebaka sa go bua se ba se kwadileng. Kwala kelotlhoko e nngwe le e nngwe (ka nepo fela jaaka e buiwa) mme o tshwaye dikelotlhoko tse di boelediawang.
- ◆ Buisanang ka ga botlhokwa jwa go sa gobeleteng fa o ela tlhoko. Tlhagisa ntlha ya gore barutabana ba tlhoka go rekota dintlha (se se bonwang le se se utlwiwang) mme e seng diphopholetso kgotsa megopolo (se ba akanyang se diragala le gore ke ka ntlha yang).
- ◆ Buisa lenane la dikelotlhoko le barutwana ba le biditseng mme lo buisane gore a polelo e nngwe le e nngwe ke NTLHA kgotsa PHOPHOLETSO. Kwala 'Nt' kgotsa 'Ph' go bapa le polelo e nngwe le e nngwe. Sekao:
 - Morutwana o agile kago ka go dirisa diboloko tse di lebegang jaaka dikhutlonnetsepa le dikhutloharo. **Nt**
 - Morutwana ga a kgone go tsepamisa diboloko tse di lebegang jaaka dikhutloharo. **Ph**
 - Morutwana o tsepamisitse mogopolo mo tirwaneng ya go aga diboloko. **Nt**
 - Morutwana yo o tlhagelelang mo lemoragong o itumetse thata. **Ph**
- ◆ A batsayakarolo ba lebelele manane a bona, ba tshwaya polelo e nngwe le e nngwe ka 'Nt' kgotsa 'Ph'.
- ◆ Garela tirwana ka puisano ka ga botlhokwa jwa go ela tlhoko go go se nang kgobeleteng.



Activity 2

Look at the photograph of two Grade R learners playing with blocks. Write down what you observe when you look at the photograph.



My observations:

Facilitator's notes

- ◆ After watching **Video 1**, add participants' observations to the list you recorded in **Activity 2**.
- ◆ Remind participants of the difference between a **FACT** and an **ASSUMPTION**. Write 'F' or 'A' next to each statement.



Video 1

Activity Guide: Term 3, Week 8, Workstation 3: Bingo game (page 150)

1. Watch the video of a group of learners playing the game, Bingo. Write down your observations of the learners.



Tirwana 2

Lebelela setshwatsho sa barutwana ba babedi ba Mophato R ba ba tshamekang ka diboloko. Kwala se o se etseng tlhoko fa o lebelela setshwantsho.



Dikelotlhoko tsa me:

Dintlha tsa mofatlhosi

- ◆ Morago ga gore o lebelele **Video 1**, tsenya dikelotlhoko tsa batsayakarolo mo lenaneng le o le rekotileng mo **Tirwaneng 2**.
- ◆ Gopotsa batsayakarolo ka ga pharologano magareng ga NTLHA le PHOPHOLETSO. Kwala 'Nt' kgotsa 'Ph' go bapa le polelo e nngwe le e nngwe.



Video 1

Kaedi ya Ditirwana: Kgweditharo 3, Beke 8, Seteišenetiro 3: Motsahmeko wa Bingo (tsebe 151)

1. Lebelela video ya setlhopho sa barutwana ba tshameka motshameko wa Bingo. Kwala dikelotlhoko tsa gago ka ga barutwana.

2. Which of your observations are facts and which are assumptions? Go through your list and write an 'F' or 'A' next to each statement.

When we write what we **think** a learner can or cannot do, or what a learner is feeling, we are making assumptions. The only way to know what a learner is thinking or feeling, is to ask them to tell you.

Objective observation involves:

- ◆ describing only what you see and hear
- ◆ recording what the learner is doing and saying in as much detail as possible
- ◆ not judging – avoid giving your own ideas and opinions
- ◆ observing each learner regularly, in different activities and at different times of the day.



Activity 3

1. Think about your observations of *one* of your learners in Term 3. What mathematical knowledge and skills is this learner developing?

2. Refer to (3) to (5) of the *Take back to school task* from Workshop 9 (page 10).
 - ◆ Discuss your use of the '**Check that learners are able to**' observation list (eye box) during teacher-guided activities.
 - ◆ Show members of your group your learner observation book.
 - ◆ Take turns to discuss a learner's progress. Which mathematical skills did you observe? How do you know? (What did the learner do and say?)
 - ◆ Explain how you captured this information using the Term 3: Exemplar Record of Continuous Assessments.
 - ◆ Did you manage to implement a differentiated approach to teaching and learning in your class. If so, how?

2. Ke dikelotlhoko dife tsa gago tse e leng dintlha le tse e leng phopholetso? Lebelela lenane la gago mme o kwale 'Nt' kgotsa 'Ph' go bapa le polelo e nngwe le e nngwe.

Fa re kwala se re **akanyang** morutwana o ka se dirang kgotsa o ka se se direng, kgotsa se morutwana o se ikutlwang, re a fopholetsa. Tsela ya go itse se morutwana o se akanyang kgotsa o se ikutlwang, ke fa o ba kopa go go bolelela.

Kelotlhoko e e sa gobeleteng e akaretsa:

- ◆ fa o tlhalosa fela se o se bonang le se o se utlwang
- ◆ fa o rekota se morutwana o se dirang le se o se buang ka go kwala dintlha tsotlhe tse di kgonagalang
- ◆ go sa athole – efoga go neela dikakanyo le megopolo ya gago
- ◆ fa o ela morutwana yo mongwe le yo mongwe tlhoko ka tlhomamo, mo ditirwaneng tse di farologaneng le ka dinako tse di farologaneng mo letsatsing.



Tirwana 3

1. Akanya ka ga dikelotlhoko tsa gago ka ga *mongwe* wa barutwana ba gago mo Kgweditharong ya 3. Ke kitso le dikgono dife tsa dipalo tse morutwana yono a nnang le tsona?

2. Lebelela (3) go fitlha ka (5) ya *Tirwana e o e busetsang kwa sekolong* go tswa mo Thutanong ya 9 (tsebe 11).

- ◆ Buisanang ka ga tiriso ya lenane la kelotlhoko la '**Netefatsa gore barutwana ba kgona go**' (lebokoso la leitlho) ka nako ya ditirwana tse di kaelwang ke morutabana.
- ◆ Bontsha ditokololo tsa setlhopha sa gago buka ya gago ya go ela barutwana tlhoko.
- ◆ Refosanelang go buisana ka ga tswelelopele ya morutwana. O etse dikgono dife tsa dipalo tlhoko? O itse seo jang? (Morutwana o dirile le go bua eng?)
- ◆ Tlhalosa gore o kwadile tshedimosetso eno jang ka go dirisa Rekoto ya Sekai sa Tlhatlhobotsweledi ya: Kgweditharo 3.
- ◆ A o kgonne go diragatsa tsela e e fapologantsweng go ruta le go ithuta mo phaposiborutelong ya gago? Fa go le jalo, jang?

Assessment in Grade R

Assessment in Grade R is used to make decisions about the best way to support each learner's development. During teacher-guided activities, whole class activities as well as other activities in the daily programme, you will have opportunities to observe learners and gain insight into their progress. This information should guide your planning for further teaching and learning.

The continuous assessment tables in CAPS and in the Maths Programme's *Activity Guides* are based on the content that has been taught each term and can be used to summarise each learner's progress during the term.

Note that skills and behaviours should be observed on several occasions so that patterns of development over time can be recorded.

Facilitator's notes

- ◆ Wrap up this session with a discussion about the importance of continuous observation and the regular recording of learner information as a basis for assessment.

Tlathobo mo Mophatong wa R

Tlathobo mo Mophatong wa R e dirisetswa go tsaya ditshwetso ka ga tsela e e siameng thata go tshegetsisa kgolo ya morutwana yo mongwe le yo mongwe. Ka nako ya ditirwana tse di kaelwang ke morutabana, ditirwana tsa phaposiborutelo yotlhe mmogo le ditirwana tse dingwe mo lenaneong la letsatsi le letsatsi, o tlaa nna le ditšhono go ela barutwana tlhoko le go nna mo seding tebang le tswelelopele ya bona. Tshedimosetso eno e tshwanetse go kaela go ithulaganya ga gago go tsweletsa go ruta le go ithuta.

Dipapetla tsa tlathobotsweledi mo PPKT le mo *Kaeding ya Ditirwana* mo Lenaneong la Dipalo di ikaegile ka diteng tse di rutilweng mo kgweditharong e nngwe le e nngwe mme e bile di ka dirisiwa go khutshwafatsa tswelelopele ya morutwana yo mongwe le yo mongwe mo kgweditharong.

Ela tlhoko gore dikgono le maitsholo di tshwanetse tsa elwa tlhoko mo dipakeng tse dintsinyana gore dipaterone tsa kgolo mo nakong e e rileng di kgone go rekotiwa.

Dintlha tsa mofatlhosi

- ◆ Digela karolo eno ka puisano ka ga botlhokwa jwa kelotlhoko e e tswelletseng pele le go rekota tshedimosetso ya morutwana ka tlhomamo jaaka motheo wa tlathobo.

Session 2: The guiding principles of teaching maths in Grade R

1 hour

Throughout the Maths Programme training, we have referred to the guiding principles of teaching maths in Grade R and how these are incorporated into daily classroom practice. Some of the principles are easier to identify and implement than others. As teachers we need to be constantly aware of how, where and when we are using these principles in our classrooms.

Facilitator's notes

- ◆ PPT: Figure 5, page 14, *Concept Guide*.
- ◆ Discuss the importance of being conscious of the guiding principles of teaching maths in Grade R and how these inform our approach to teaching. It is only when we are aware of these principles and reflect on how we incorporate them in our teaching that they become a part of how we approach our classroom practice.
- ◆ Divide the participants into eight small groups. Assign one guiding principle to each group. Give the corresponding picture of this principle (Appendix B) to each group.
- ◆ Participants discuss their principle in their small groups. They then present their understanding and observations of how their principle plays out in the classroom.
- ◆ The participants paste the A5 picture on flipchart paper and write their comments underneath it to share with the whole group.



Activity 4

The facilitator will assign one of the guiding principles of teaching maths in Grade R to your group. You will receive a picture of this principle.

1. In your group, discuss the following questions:
 - ◆ What is your understanding of this principle 'in action'?
 - ◆ Does the Maths Programme make it possible to incorporate this principle in your daily teaching?
 - ◆ Now that you have implemented the Maths Programme for three terms, what are your reflections on this principle?
 - ◆ How would your teaching be affected if this principle was absent from your classroom approach?
2. Paste the picture onto a sheet of flipchart paper. Write your comments below the picture so that you can share these with the whole group.

Karolo 2: Melawana e e kaelang go ruta dipalo mo Mophato R

Ura e le 1

Go ralala katiso ya Lenaneo la Dipalo, re lebeletse melawana e e kaelag go ruta dipalo mo Mophato R le gore tseno di tsenyeleditswe jang mo tiragatsong ya letsatsi le letsatsi ya phaposiborutelo. Mengwe ya melawana eno go bonolo go e lemoga le go e dirisa go na le e mengwe. Re tlhoka go nna re le malala a laotswe gore re dirisa leng melawana eno, jang le gona kae jaaka barutabana.

Dintlha tsa mofathosi

- ◆ PPT: Sethalo 5, tsebe 15, *Kaedi ya Mogopolo*.
- ◆ Buisanang ka ga botlhokwa jwa go itse melawana e e kaelang go ruta dipalo mo Mophato R le gore seno se re thusa jang ka mekgwa ya go ruta. Ke fela fa re itse melawana eno le go sedisisa ka moo re e tsenyeletsang ka teng mo go ruteng ga rona e ka nnang karolo ya ka moo re diragatsang ka teng mo diphaposiborutelong tsa rona.
- ◆ Aroganya batsayakarolo ka ditlhophha tse dinnye tse robedi. Tlhaolela molawana o le mongwe o o kaelang setlhophha se sengwe le se sengwe. Neela setlhophha se sengwe le se sengwe setshwantsho se se tsamaelanang le molawana ono (Mametlelelo B).
- ◆ A batsayakarolo ba buisane ka ga molawana wa bona mo ditlhophheng tsa bona tse dinnye. Jaanong ba tlhagisa ka moo ba thaloganyang molawana ka teng le dikelotlhoko tsa gore molawana ono o dira jang mo phaposiborutelong.
- ◆ A batsayakarolo ba mamaretse setshwantsho sa A5 mo pampiring ya tšhatephetogi mme ba kwale ditshwaelo tsa bona ka fa tlase ga yona go di arogana le setlhophha sotlhe.



Tirwana 4

Mofathosi o tlaa tlhaolela setlhophha sa gago mongwe wa molawana o o kaelang go ruta dipalo mo Mophato R. O tlaa neelwa setshwantsho sa molawana ono.

1. Mo setlhophheng sa gago, buisanang ka dipotso tse di latelang:
 - ◆ O thaloganyang ka molawana ono 'mo tiragatsong'?
 - ◆ A Lenaneo la Dipalo le dira gore go kgonagale go tsenyeletsa molawana ono mo go ruteng ga gago letsatsi le letsatsi?
 - ◆ Ka jaanong o diragaditse Lenaneo la Dipalo dikgweditharo di le tharo, tshedisiso ya gago tebang le molawana ono ke efe?
 - ◆ Go ruta ga gago go ne go tlaa amega jang fa molawana ono o ka bo o ne o se yo mo mokgweng wa gago wa tiragatso mo phaposiborutelong?
2. Mamaretse setshwantsho mo letlhareng la pampiri ya tšhatephetogi. Kwala ditshwaelo tsa gago fa tlase ga setshwantsho gore o kgone go ka arogana tseno le setlhophha sotlhe.



1. The context principle. Learning takes place in meaningful and appropriate situations.



2. The activity principle. Learners should be directly involved in the learning-teaching process.



8. The practice principle. Learning is consolidated through practising new skills and knowledge.



7. The inclusivity principle. Learning takes place in an environment where everyone is welcomed, included, treated fairly, respected and can participate.

8 THE EIGHT PRINCIPLES OF GRADE R MATHS



3. The play principle. Children learn best in free-play and guided-play activities.



6. The guidance principle. Learning takes place when teachers guide learners in developing new knowledge.



5. The interaction principle. Learning takes place when there is communication and sharing of ideas.



4. The level principle. Learners pass through various levels of understanding and development.



1. **Molawana wa bokaelo.**
Go rutega go diragala mo maemong a amogesehang e bile a le maleba.



2. **Molawana wa ditirwana.**
Barutwana ba tshwanetse go nna le seabe ka tlhamalalo mo go rutweng le go ithuteng.



8. **Molawana wa tiragatso.** Go rutega go lotagangwa ka tiragatso ya dikgono tse dišwa le kitso.



7. **Molawana wa kakaretso.** Go rutega go diragala mo tikologong e mongwe le mongwe a ikutlwang a amogesehile, a akarediwa, a tshwerwe sentle, a tlotliwa mme e bile a na le seabe.

MELAWANA E LE ROBEDI
YA GRADE R MATHS



3. **Molawana wa motshameko.** Barutwana ba rutega thata mo ditirwaneng tsa go tshameka ka tokologo le tse di kaelwang ke morutabana.



6. **Molawana wa go kaelwa.** Go rutega go diragala fa barutabana ba kaela barutwana mo go ageng kitso e ntšhwa.



5. **Molawana wa tirisano.** Thuto e diragala fa go na le tlhaeletsano le thefosano ya dikakanyo.



4. **Molawana wa maemo.** Barutwana ba feta mo maemong a a farologaneng a go tlhaloganya le kgolo.

Session 3: Introducing numbers 10 and 0

1 hour

Introducing number 10

Facilitator's notes

- ◆ PPT: Summarise information below.
- ◆ Discuss the base 10 number system that we use. Emphasise that in Grade R learners only need to work with and understand the numbers 0–10. (**Activity 5** is for enrichment. It is not intended for use in Grade R classrooms.)
- ◆ When using expanding number cards (flashcards) like the ones in Appendix C to make two-digit and three-digit numbers, always use the units (ones), tens or hundreds. Never use only the units to represent a two-digit or three-digit number. For example: for 11 use 10 and 1, not 1 and 1.
- ◆ Explain that in Grade 1 learners begin to work with place value. They need to understand the value of each digit in the number. It is important that Grade R learners understand that 10 is a number and not just $1 + 0$. Learners should make groups of ten. They should also use sticks to make bundles to represent ten and match the bundle with the 'ten' number word card.
- ◆ **Emphasise that teachers should not introduce place value in Grade R and that Activity 5 is an enrichment activity for workshop participants only.**

The ten numerals used in our place value number system are 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. These numerals are used to represent units (ones) and to represent an infinite number of values, for example:

- ◆ tens
- ◆ hundreds
- ◆ thousands, and so on.

Learners in the Foundation Phase need to understand that the same numeral can be used to represent different values, depending on the position of the numeral in a number. For example, in each of the numbers below '3' has a different value:

- ◆ in 3, its value is 'three'
- ◆ in 31, its value is 'thirty'
- ◆ in 349, its value is 'three hundred'.

Place value is a difficult concept for learners to understand. Researchers have found that many learners up to the age of eight think that the '1' in 15 means 'one'.

Karolo 3: Go tlhagisa dinomere 10 le 0

Ura e le 1

Go tlhagisa nomere 10

Dintlha tsa mofatlhosi

- ◆ PPT: Khutshwafatsa tshedimosetso e e fa tlase.
- ◆ Buisanang ka thulaganyosomeng e re e dirisang. Gatelela gore mo Mophatong wa R, barutwana ba tlhoka fela go tlhaloganya dinomere 0-10 le go dira ka tsona. (**Tirwana 5** ke ya tlaleletso fela go oketsa kitso. Maitlomo a yona ga se go dirisiwa mo phaposiborutelong ya Mophato wa R.)
- ◆ Fa o dirisa mokwalokatooso (dikarata tse di benyang) jaaka tse di mo Mametlelelong ya C go dira dinomere tsa palo-pedi kgotsa palo-tharo, dirisa metso (bonngwe), masome kgotsa makgolo. O seke wa dirisa fela metso go tlhagisa nomere ya palo-pedi kgotsa palo-tharo. Sekao: dirisetsa 11 10 le 1, e seng 1 le 1.
- ◆ Tlhalosa gore mo Mophatong wa R, barutwana ba simolola go dira ka bolengpalo. Ba tlhoka go tlhaloganya boleng jwa palo e nngwe le e nngwe mo nomoreng. Go bothokwa gore barutwana ba Mophato R ba tlhaloganye gore 10 ke nomere mme e seng fela 1 + 0. Barutwana ba tshwanetse go dira ditlhopho tsa lesome. Gape ba tshwanetse go dirisa dikota go dira dingatana go tlhagisa lesome le go nyalanya ngatana le karata ya mafokopalo a 'lesome'.
- ◆ **Gatelela gore barutwana ba seke ba tlhagisa bolengpalo mo Mophatong wa R le gore Tirwana 5 ke tirwanatlaleletso ya koketso ya batsayakarolo ba thutano fela.**

Dipalo tse di lesome tse di diriswang mo thulaganyong ya bolengpalo ke 0, 1, 2, 3, 4, 5, 6, 7, 8 le 9. Dipalo tseno di dirisiwa go tlhagisa metso (bonngwe) le go tlhagisa dipalo tsa dinomere tse di sa khutleng, sekao:

- ◆ masome
- ◆ makgolo
- ◆ dikete, jalo le jalo.

Barutwana ba Thuto ya Motheo ba tlhoka go tlhaloganya gore palo e le nngwe e ka dirisiwa go tlhagisa bolengpalo jo bo farologaneng, go ikaigile fela ka boemo jwa palo mo nomoreng. Sekao, mo go enngwe le e nngwe ya dinomere tse di mo tlase ga '3' e na le boleng jo bo farologaneng:

- ◆ mo go 3, palo ya yona ke 'tharo'
- ◆ mo go 31, palo ya yona ke 'masometharo'
- ◆ mo go 349, palo ya yona ke 'makgolotharo'.

Bolengpalo ke mogopolo o o thata go ka tlhaloganngwa ke barutwana. Babatlisisi ba fitlhetse gore bontsi jwa barutwana go fitlha mo dingwageng tse robedi ba akanya gore '1' mo go 15 e kaya 'nngwe'.

In Grade 1 learners explore the base ten number system, working with numbers from 11 onwards. They represent these numbers with groups of tens and single ones (units). When they work with numbers 11–19, they begin to understand that in a number like 14, the numeral 1:

- ◆ does not mean 1
- ◆ represents 10 ones
- ◆ therefore, is also 1 ten (1 group of ten).

They also understand that the numeral 4 in 14, represents 4.

DID YOU KNOW?

In the Foundation Phase, learners talk about ‘tens’ and ‘units’ as ‘groups of ten’ and single ‘ones’. They represent two-digit and three-digit numbers using grouping models and expanding number cards.

We do not introduce place value in Grade R. The focus in this grade is on understanding the value of the numbers 0–10 and on building a strong number concept within this range. If learners have a good concept of the numbers to 10, this knowledge can be extended in Grade 1 and other grades.



Activity 5

IMPORTANT!

This activity is for the development of your own knowledge and enrichment. It is not appropriate for Grade R learners. Do NOT introduce this activity in Grade R.

Use the counters, sticks and number cards provided to represent the following numbers:

14 31 22 43

1. Represent each number using counters: make groups of ten and single ones.
2. Represent each number using sticks and string: make bundles of ten and single ones.
3. Label the bundles with the correct number cards.
4. Talk about how many groups of ten and how many ones each number has.
5. Discuss the value of each numeral.

Mo Mophatong wa R, barutwana ba lekeletsa thulaganyosomeng, ba dira ka dinomore go simologa ka 11 go ya kwa pele. Ba tthagisa dinomore tseno ka ditlhopha tsa masome le bonngwe ba le bosii (metso). Fa ba dira ka dinomore 11–19, ba simolola go tthaloganya gore mo nomoreng e e tshwanang le 14, palo 1:

- ◆ ga e kaye 1
- ◆ e emetse bonngwe ba le 10
- ◆ ka jalo, gape ke lesome le le 1 (setlhopha se le 1 sa lesome).

Gape ba tthaloganya gore palo 4 mo go 14, e emetse 4.

A O N E O ITSE?

Mo Thutong ya Motheo, barutwana ba bua ka 'masome' jaaka 'ditlhopha tsa lesome' le 'bonngwe' ba le bosii. Ba tthagisa dinomore tsa palo-pedi le palo-tharo ka go dirisa mmotlolo wa go baya ka ditlhopha le mekwalokatoloso.

Ga re tthagise bolengpalo mo Mophatong wa R. Mo mophatong ono go tobilwe go tthaloganya palo ya dinomore 0–10 le go aga mogopolopalo o o tiileng mo mofuteng ono. Fa barutwana ba na le mogopolo o o siameng wa dinomore go fitlha ka 10, kitso eno e ka fetisetswa kwa Mophatong wa 1 le kwa mephatong e mengwe.



Tirwana 5

SENO SE BOTLHOKWA!

Tirwana eno ke ya go godisa kitso ya gago le go go matlafatsa. Ga e maleba le barutwana ba Mophato R. O SEKA wa tthagisa tirwana eno mo Mophatong wa R.

Dirisa dibadi, dikota le dikaratapalo tse di neetsweng go emela dinomore tse di latelang:

14 31 22 43

1. Tthagisa nomore e nngwe le e nngwe o dirisa dibadi: dira ditlhopha tsa lesome le bonngwe ba le bosii.
2. Tthagisa nomore e nngwe le e nngwe o dirisa dikota le mogala: dira dingatana tsa bonngwe ba le lesome bonngwe ba le bosii.
3. Tshwaya dingatana ka dikaratapalo tse di nepagetseng.
4. Buang ka ga gore go na le ditlhopha di le kae tsa lesome le gore nomore e nngwe le e nngwe e na le bonngwe ba le kae.
5. Buisanang ka ga bopalo jwa palo e nngwe le e nngwe.

6. Which apparatus do you think was more appropriate for representing the concepts of 'groups of ten' ('tens') and 'ones'? Explain your answer.

7. What do you notice about the value of the numerals in the numbers you represented with the number cards?

Grade R learners **do not need to understand place value**. They do need to:

- ◆ understand the value (the 'how muchness') of numbers 0–10
- ◆ understand the different combinations of numbers up to 10
- ◆ understand that even though 10 is made up of the numerals 1 and 0, it is NOT $1 + 0$ and it has its own value ('how muchness')
- ◆ understand and be able to represent the different values of 1, 0 and 10.

Facilitator's notes

- ◆ After **Activity 6**, take feedback from the groups on ideas for teaching the number 10. These could include:
 - number frieze and story
 - dot card activities
 - number washing line
 - comparing groups of objects
 - structure beads
 - number track.
- ◆ Discuss whether these activities would be suitable for whole class, teacher-guided or small group activities.
- ◆ Emphasise that when applying the number symbol 10 to a group of objects, learners should use the number symbol card '10' and not number symbol cards '1' and '0'.



Activity 6

1. In your group, discuss ideas for teaching the number 10 in your Grade R classroom. Include the use of different representations.

6. Ke sediriswa sefe se o akanyang gore se ne se le maleba thata go tthagisa megopolo ya 'ditlhophha tsa lesome' ('masome') le 'bonngwe'? Tlhalosa karabo ya gago.

7. O lemogang ka ga bopalo jwa dipalo mo nomoreng e o e tthagisitseng ka dikaratapalo?

Barutwana ba Mophato R **ga ba tlhoke go tthaloganya bolengpalo**. Ba tlhoka go:

- ◆ tthaloganya bopalo jwa ('bobokae') jwa dinomore 0–10
- ◆ tthaloganya dikopanyo tse di farologaneng tsa dinomore go fithelela ka 10
- ◆ tthaloganya gore le fa 10 e dirilwe ka dipalo 1 le 0, GA SE 1 + 0 le gore e na le bopalo jwa yona (('bobokae')
- ◆ tthaloganya le go kgona go emela dipalo tse di farologaneng tsa 1, 0 le 10.

Dintlha tsa mofatlhosi

- ◆ Morago ga **Tirwana 6**, batla dikakanyo tse di tswang mo ditlhopheng tebang le go ruta nomore 10. Tseno di ka akaretsa:
 - dinomorekgabisi le kanelo
 - ditirwana tsa dikaratarontho
 - mogala wa dinomore
 - go bapisa ditlhophha tsa dilo
 - dibaga tsa dikago
 - molapalo.
- ◆ Buisanang gore a mme ditirwana tseno di tshwanetse ditirwana tsa phaposiborutelo yotlhe, tse di kaelwang ke morutabana kgotsa tsa ditlhophha tse dinnye.
- ◆ Gatelela gore fa o dirisa letshwaopalo la 10 mo ditlhopheng tsa dilo, barutwana ba tshwanetse go dirisa karatatshwao ya dipalo '10' e seng dikaratatshwao tsa palo '1' le '0'.



Tirwana 6

1. Mo setlhopheng sa gago, buisanang ka dikakanyo tsa go ruta nomore 10 mo diphaposiborutelong tsa lona tsa Mophato R. Akaretsang tiriso ya ditthagiso tse di farologaneng.

2. Present your ideas to the whole group.

Introducing number 0

In Grade R, learners need to understand that zero is a number and the number symbol for it is '0'.

Young children find the concept of 'emptiness' difficult to understand. When learners are faced with an empty plate, container, box or bag they will often use words such as 'no more', 'all gone', 'nothing left', 'none' or 'empty' to describe the situation. Teachers should accept these correct descriptions, but should also introduce the word 'zero'. The word 'zero' should be used consistently, even when counting down or backwards, e.g., when counting backwards from four: 'four, three, two, one, zero'. The symbol '0' should be placed on the number washing line. The 0 number cards should be used to represent that an object (such as a plate, tub, lid, box) is empty.



Activity Guide: Term 4, Week 3, Day 1 #4 and #5, Day 2 #2 and #4, Day 3 #3, Day 4 #4, Day 5 #4 (pages 56-63)

1. Watch the video of a teacher introducing and consolidating the concept of zero.
 - ◆ What do you see happening?
 - ◆ How was the concept of zero introduced?
 - ◆ What did the learners do and say?
 - ◆ What was the role of the teacher?
 - ◆ What was the benefit of using a variety of activities to teach the concept?

2. Write down your observations.

2. Tlhagisetsa setlhopha sotlhe dikakanyo tsa gago.

Go tlhagisa nomore 0

Mo Mophatong wa R, barutwana ba tlhoka go tlhaloganya gore lefela ke nomore le gore letshwaopalo la yona ke '0'.

Bana ba bannye ba bona mogopolo wa 'lolea' o le thata go tlhaloganyega. Fa barutwana ba lebanwe ke sejana, setshodi, lebokoso kgotsa kgetsana e e lolea, go le gantsi ba dirisa mafoko a a tshwanang le 'ga go sa tlhole go na le', 'go ile gotlhe', 'ga go a sala sepe', 'sepe' kgotsa 'lolea' go tlhalosa maemo. Barutabana ba tshwanetse go amogela ditlhalosetso tseno jaaka tse di nepagetseng, mme gape ba tshwanetse ba tlhagisa lefoko 'lefela'. Lefoko 'lefela' le tshwanetse go dirisiwa ka tlhomamo, le fa go balelwa kwa tlase kgotsa kwa morago, sk., fa o balela kwa morago go tswa kwa go nne: 'nne, tharo, pedi, nngwe, lefela'. Letshwao '0' le tshwanetse go bewa mo mogaleng wa dinomore. Dikaratapalo tsa 0 di tshwanetse go dirisiwa go tlhagisa gore selo (jaaka sejana, setshodi, sekhurumelo, lebokoso) ga se na sepe.

Video 2

Kaedi ya Ditirwana: Kgweditharo 4, Beke 3, Letsatsi 1 #4 le #5, Letsatsi 2 #2 le #4, Letsatsi 3 #3, Letsatsi 4 #4, Letsatsi 5 #4 (ditsebe 56-63)

1. Lebelela video ya morutabana a tlhagisa le go tsolotanya mogopolo wa lefela.
 - ◆ O bona go diragalang?
 - ◆ Ke megopolo e le kae ya lefelo e e tlhagisitsweng?
 - ◆ Barutwana ba dirileng kgotsa ba rileng?
 - ◆ Seabe sa morutabana e ne e le sefe?
 - ◆ Tshiamelo ya go dirisa ditirwana tsa mefutafuta go ruta mogopolo e nnile efe?

2. Kwala dikelotlhoko tsa gago.

Facilitator's notes

- ◆ Discuss the kinds of classroom activities that were used to help learners understand the value of '0', for example:
 - adding '0' to the jumping number track and asking what number the learner started on ('no jumps yet')
 - counting groups of objects that include 0 objects
 - matching empty groups of objects to the '0' number card
 - including '0' in the counting sequence (on the number line)
 - showing empty hands to represent '0'.

Dintlha tsa mofatlhosi

- ◆ Buisanang ka ga mefuta ya ditirwana tsa phaposiborutelo e e dirisitsweng go thusa barutwana go tlhaloganya bopalo jwa '0', sekao:
 - go tsenya '0' mo molapalong wa go tlola le go botsa gore morutwana o simolotse mo nomoreng efe ('ga go ise go nne le tlolo epe')
 - go bala ditlhopha tsa dilo tse di akaretsang 0 la dilo
 - go nyalanya ditlhopha tse di lolea tsa dilo le karatapalo ya '0'
 - go akaretsa '0' mo tllatlhamanong ya go bala (mo molapalong)
 - go bontsha diatla tse di lolea go tlhagisa '0'.

Session 4: Planning for teaching

1½ hours

This workshop session prepares participants for implementing Term 4 Weeks 1–3. By this stage of the year, the teacher will have noticed distinct differences between learners' levels of progress. Term 4 builds on the content of Terms 1, 2 and 3. Some learners will be ready for this, while others will need support and more consolidation to progress. It is important to plan and prepare for this difference in learner competence to ensure that all the content and skills of Grade R Mathematics are covered, and learners are well prepared for Grade 1.

Facilitator's notes

- ◆ Move between the small groups as participants discuss the planning and preparation for teaching Term 4 Weeks 1–3 in **Activity 7**. Assist them by making suggestions on overcoming challenges.
- ◆ Each small group plans the three weeks and completes the templates in Appendix A.
- ◆ The small groups present their responses to the questions in **Activity 7**. The whole group discusses differentiated teaching and learning.



Activity 7

1. In your group, complete the planning templates for Term 4 Weeks 1–3 (Appendix A).
2. Discuss the following questions:
 - ◆ How is the week structured?
 - ◆ How does the content build on previous lessons?
 - ◆ Do the whole class activities successfully create opportunities for the discussion and exploration of new knowledge?
 - ◆ How does the teacher-guided activity provide opportunities for the teacher to assess and support the learners?
 - ◆ Do the independent small group activities allow for adequate practice of new knowledge and skills?
 - ◆ How could you prepare additional activities to support learners who have not yet mastered a particular skill?
 - ◆ Suggest some ways to extend learning opportunities for advanced learners.
 - ◆ How could you work with a colleague to prepare for each week?

Karolo 4: Go ithulaganyetsa go ruta

Diura di le 1½

Karolo eno ya thutano e baakanyetsa batsayakarolo go diragatsa Kgweditharo 4 Dibeke 1–3. Mo pakeng eno ya ngwaga, morutabana o tshwanetse a bo a lemogile pharologano e e itlhaotseng magareng ga maemo a tswelolepele ya barutwana. Kgweditharo 4 e agelela mo ditennyeng tsa Kgweditharo 1, 2 le 3. Bangwe ba barutwana ba tlaa bo ba le malala a laotswe, fa ba bangwe ba tlaa tlhoka tshegetso le tsolotanyo e e rileng go tswelolela pele. Go botlhokwa go ithulaganyetsa le go ipaakanyetsa pharologano eno ya bokgoni jwa barutwana go netefatsa gore diteng tsothle le dikgono tsa Dipalo tsa Mophato R di lebeleletswe, le gore barutwana ba ipaakanyeditse Mophato 1 sentle.

Dintlha tsa mofatlhosi

- ◆ Tsamaya tsamaya magareng ga ditlhopho tse dinnye fa batsayakarolo ba ntse ba buisana ka ga go ithulaganya le go baakanyetsa go ruta Kgweditharo 4 Dibeke 1–3 mo **Tirwaneng 7**. Ba thuse ka go dira ditshikhinyo tsa go fena dikgwetlho.
- ◆ Setlhopho se sengwe le se sengwe se sennye se rulaganyetsa dibeke tse tharo mme se tlatsa thempoleiti mo Mametlelelong ya A.
- ◆ Ditlhopho tse dinnye di tlhagisa ditsibogo tsa tsona tsa dipotso tse di mo **Tirwaneng ya 7**. Setlhopho sotlhe se buisana ka ga go ruta le go ithuta ka phapologantsho.



Tirwana 7

1. Mo setlhopheng sa gago, tlatsa dithemopleiti tsa go ithulaganyetsa Kgweditharo 4 Dibeke 1–3 (Mametlelele A).
2. Buisanang ka ga dipotso tse di latelang:
 - ◆ Beke e rulagantswe jang?
 - ◆ Diteng di ageletswe jang mo dithutong tse di fetileng?
 - ◆ A ditirwana tsa phaposiborutelo yotlhe di kgonne go tlhola ditšhono tsa go buisana le go tlhotlhomisa kitso e ntšhwa ka katlego?
 - ◆ Tirwana e e kaelwang ke morutabana e neelana jang ka ditšhono tsa gore morutabana a tlhatlhobe le go tshegetsa barutwana?
 - ◆ A ditirwana tse di ikemetseng tsa ditlhopho tse dinnye di letla ikatiso e e lekaneng ya kitso e ntšhwa le dikgono?
 - ◆ O ne o ka baakanya jang ditirwana tsa tlaleletso go tshegetsa barutwana ba ba iseng ba tshwarelele kgono e e rileng sentle?
 - ◆ Tshikhinya ditsela dingwe go atolosetsa barutwana ba ba setseng ba le kwa pele ditšhono tsa go ithuta.
 - ◆ O ne o ka dira jang le modirammmogo go baakanyetsa beke e nngwe le e nngwe?

Closing activities

30 minutes

Facilitator's notes

- ◆ **Workshop reflection:** Ask participants to take a few minutes to reflect on the day and to page through their *Participant's Workbook*. Ask them to jot down any questions or comments to share with the whole group.
Ask individual participants to volunteer responses to the following:
 - I learnt ...
 - I did not like ...
 - I enjoyed ...
 - I now understand ...
 - I'm still not clear about ...
 - I would like more information on ...
- ◆ Encourage participants to add any comments and feedback not yet shared to the post box.
- ◆ **Take back to school task:** Read through this task. Ask if there is anything that is not clear and that requires more explanation.
- ◆ **Evaluation:** Hand out copies of the Workshop Evaluation Form and have participants complete the form.
- ◆ **Next workshop:** Give dates for the next workshop and close the workshop.



Activity 8

Workshop reflection: Take a few minutes to reflect on the day. Page through your *Participant's Workbook* to remind yourself of what was covered. Write down your thoughts.

- ◆ I learnt _____

- ◆ I did not like _____

- ◆ I enjoyed _____

- ◆ I now understand _____

- ◆ I'm still not clear about _____

- ◆ I would like more information on _____

Share your reflections with the whole group.

Dintlha tsa mofatlhosi

- ◆ **Tshedisiso ya thutano:** Kopa batsayakarolo go beela thoko metsotso e le mmalwa go sedisisa letsatsi le go phetlha *Bukatiro ya Batsayakarolo*. Ba kope go kwala dipotso kgotsa ditshwaelo go arogana le setlhopha sotlhe.
Kopa batsayakarolo ka bosii go ithaopa go tsibogela tse di latelang:
 - Ke ithutile ...
 - Ga ke a rata ...
 - Ke itumetse ...
 - Jaanong ke a tlhloganya ...
 - Ke sa ntse ke sa tlhloganye ...
 - Nka rata go bona tshedimotsetso e ntsi ka ...
- ◆ Rotloetsa batsayakarolo go tlaleletsa ditshwaelo dingwe le dingwe le ditlamorago tse di iseng di arogangwe kwa lebokosong la poso.
- ◆ **Tirwana e o e busetsang kwa sekolong:** Buisa tirwana eno. Botsa gore a go na le sengwe se se sa tlhakang mme se tlhoka go tlhalosiwa gape.
- ◆ **Tlhatlhobo:** Ntsha dikhophi tsa Foromo ya Tlhatlhobo ya Thutano mme o kope batsayakarolo go e tlatsa.
- ◆ **Thutano e e latelang:** Neela matlha a thutano e e latelang mme o khutlise thutano.



Tirwana 8

Tshedisiso ya thutano: Tsaya metsotso e le mmalwa go sedisisa ka ga letsatsi. Phetlha *Bukatiro ya Batsayakarolo*. ya gago go ikgopotsa se se dirilweng. Kwala dikakanyo tsa gago.

- ◆ Ke ithutile _____

- ◆ Ga ke a rata _____

- ◆ Ke itumeletse _____

- ◆ Jaanong ke tlhloganya _____

- ◆ Ke sa ntse ke sa tlhloganye sentle _____

- ◆ Ke tlhoka tshedimotsetso e ntsinyana ka _____

Arogana tshedisiso ya gago le setlhopha sotlhe.



Take back to school task

1. Use *Activity Guide: Term 4* to plan and implement Term 4 Weeks 1–3 of the Maths Programme.
2. Write comments in the book that you use to keep track of each learner’s progress (learner observation book). Use the **‘Check that learners are able to’** observation list (eye box) during each of the teacher-guided activities to guide your observations and comments.
3. Make notes of what worked well, what did not work well and how you resolved any challenges during your implementation of Term 4 Weeks 1–3.
4. Bring your learner observation book and the notes you made when reflecting on each day’s teaching to the next workshop.

Evaluation

Complete the Evaluation Form.



Tirwana e o e busetsang kwa sekolong

1. Dirisa *Kaedi ya Ditirwana: Kgweditharo 4* go rulaganya le go diragatsa Kgweditharo 4 Dibeke 1–3 tsa Lenaneo la Dipalo.
2. Kwala ditshwaelo mo bukeng tse o di dirisang go ela tlhoko tswelelopele ya morutwana (buka ya ngwana ya kelotlhoko). Dirisa lenanekelotlhoko (lebokoso la leitlho) la '**Ela tlhoko gore barutwana ba kgona go**'. Ka nako ya ditirwana tse dingwe le tse dingwe tse di kaelwang ke morutabana go kaela dikelotlhoko le ditshwaelo tsa gago.
3. Kwala dintlha tsa se se dirileng sentle thata, se se sa dirang sentle le gore ba rarabolotse jang dikgwetlho dingwe ka nako ya tiragatso ya Kgweditharo 4 Dibeke 1–3.
4. Tlala ka buka ya morutwana ya kelotlhoko le dintlha tse o di kwadileng fa o sedisisa thuto ya letsatsi le lengwe le le lengwe mo thutanong e e latelang.

Tlhatlhobo

Tlatsa Foromo ya Tlhatlhobo.

APPENDIX A: TERM 4 WEEKLY PLANNING TEMPLATE

Term 4: Activity Plan: Week ____

CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

MAMETLELELO A: KGWEDITHARO 4 THEMPOLEITI YA THUALAGANYO YA BEKE LE BEKE

Kgweditharo 4: Thulaganyo ya ditirwana: Beke ____

KAROLOTENG:				
SETLHOGO:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa sethopho se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

Term 4: Activity Plan: Week ____

CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

Kgweditharo 4: Thulaganyo ya ditirwana: Beke ____

KAROLOTENG:				
SETLHOGO:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa setlhopha se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

Term 4: Activity Plan: Week ____

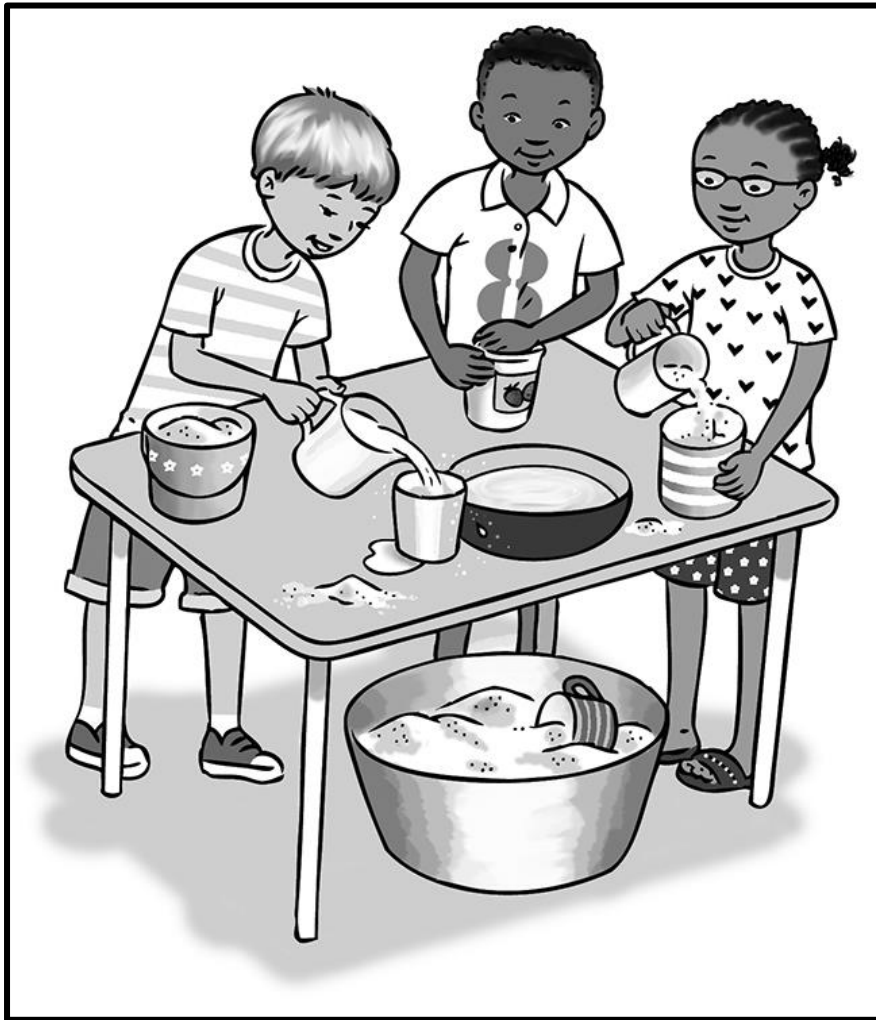
CONTENT AREA:				
TOPIC:				
INTRODUCE NEW KNOWLEDGE:				
PRACTISE:				
Whole class activities		Teacher-guided activity	Workstation activities (independent small group activities)	
Day 1			Activity 1	
Day 2			Activity 2	
Day 3			Activity 3	
Day 4			Activity 4	
Day 5				

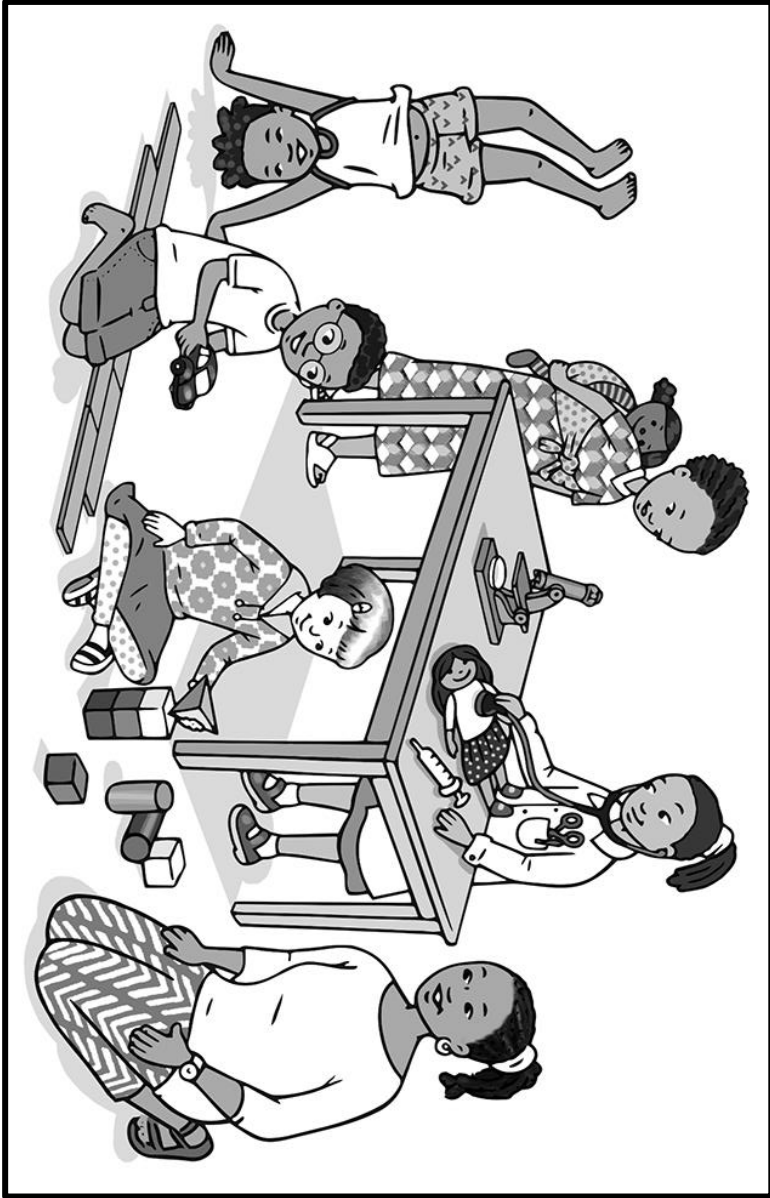
Kgweditharo 4: Thulaganyo ya ditirwana: Beke ____

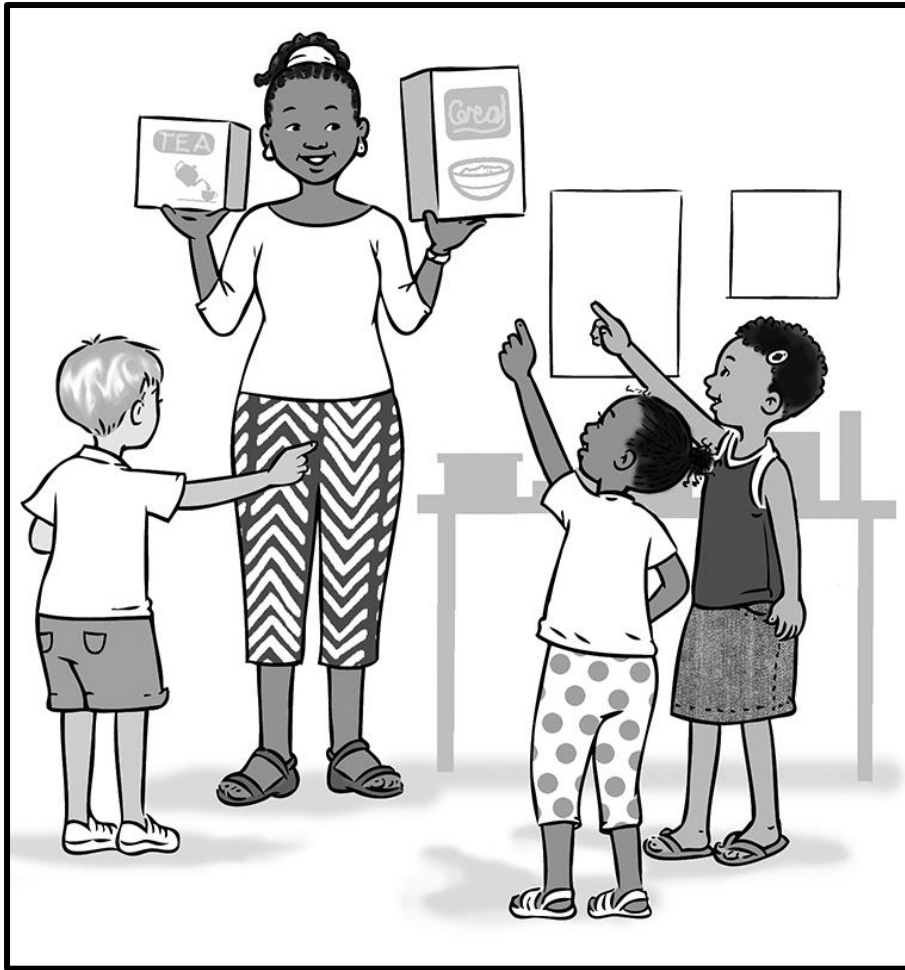
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SETLHOGO:				
TLHAGISA KITSO E NTŠHWA:				
IKATISE:				
Ditirwana tsa phaposiborutelo yotlhe		Tirwana e e kaelwang ke morutabana	Ditirwana tsa seteišenetiro (ditirwana tse di ikemetseng tsa setlhopha se sennye)	
Letsatsi 1			Tirwana 1	
Letsatsi 2			Tirwana 2	
Letsatsi 3			Tirwana 3	
Letsatsi 4			Tirwana 4	
Letsatsi 5				

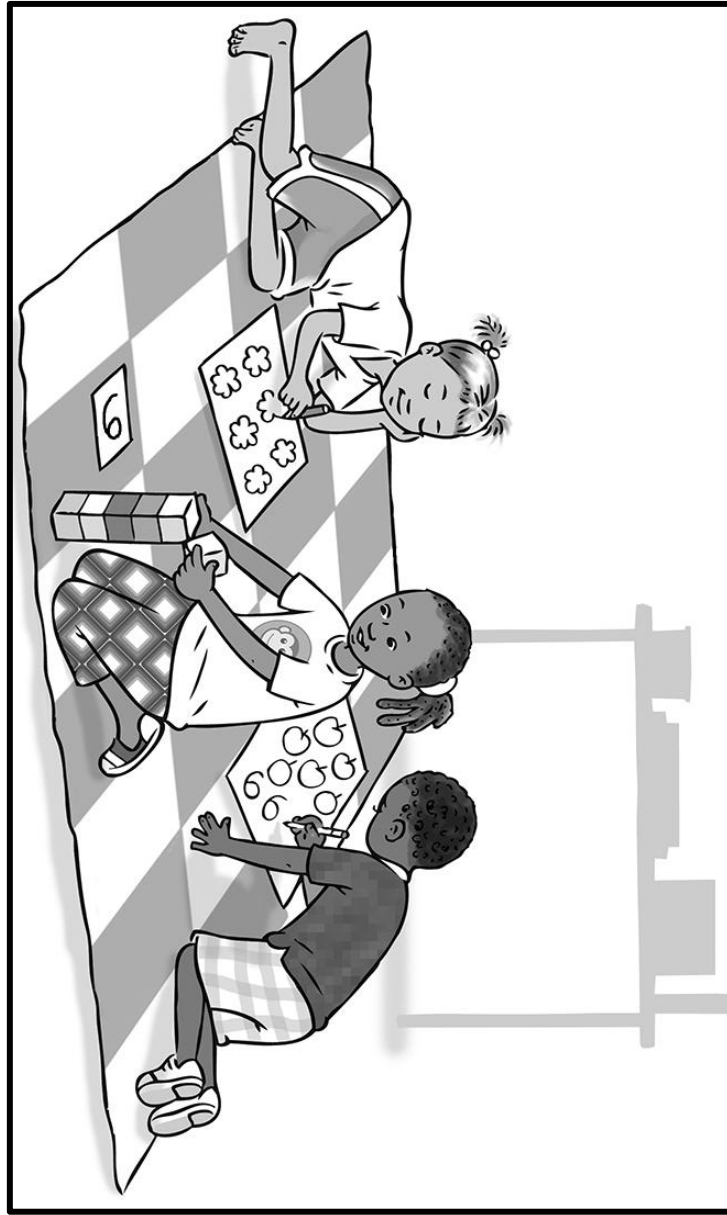
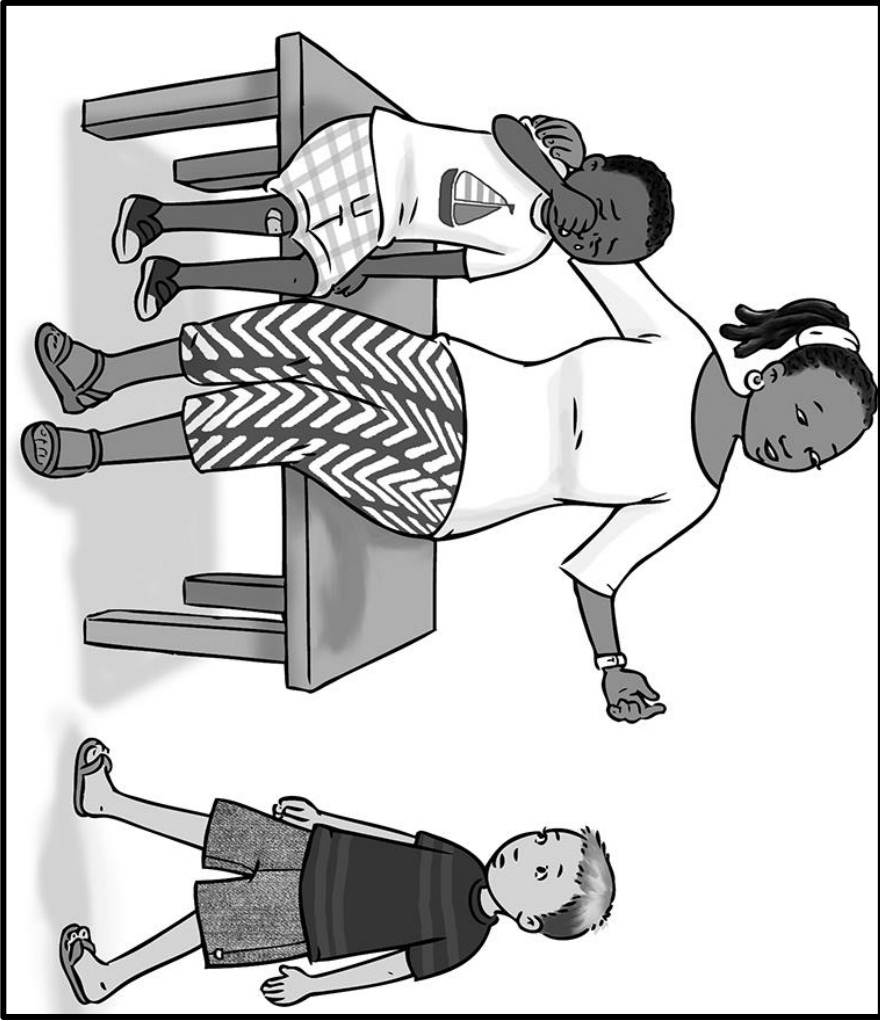
APPENDIX B: THE GUIDING PRINCIPLES OF TEACHING MATHS IN GRADE R (PICTURES)

MAMETLELELO B: MELAWANA E E KAELANG YA GO RUTA DIPALO MO MOPHATO R (DITSHWANTSHO)









APPENDIX C: EXPANDING NUMBER CARDS

10	
20	
30	
40	
1	2
3	4

MAMETLELELO C: GO ATOLOSA DIKARATAPALO

10	
20	
30	
40	
1	2
3	4

Workshop 10 Evaluation Form

1. Did the workshop meet your expectations?

2. What did you learn in this workshop that helped you the most?

3. Was there anything that you did not like or had difficulty understanding?

4. How will you apply what you have learnt in your Grade R classroom?

5. Do you have any suggestions for improving further workshops?

Foromo ya Tlhatlhobo ya Thutano 10

1. A thutano e kgonne go fitlhelela ditsholofelo tsa gago?

2. Ke eng se o se ithutileng mo thutanong eno se se go thusitseng go gaisa?

3. A go na le sengwe se o sa se ratang kgotsa se se neng se go thatafalela?

4. O ya go diragatsa jang se o se ithutileng mo phaposiborutelong ya gago ya Mophato wa R?

5. A go na le se o se tshikhinyang go ka thusa go tokafatsa dithutano tse di latelang?
